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(54) Title: BAKE-HARDENABLE COLD ROLLED STEEL SHEET HAVING EXCELLENT FORMABILITY, AND METHOD OF MANUFACTURING THE SAME

(57) Abstract: A bake-hardenable cold rolled steel sheet, and a method of manufacturing the same, designed to have bake hardenability and excellent formability suitable for automobile bodies, and the like. The steel sheet comprises 0.003 ~ 0.005 % C, 0.003 ~ 0.03 % S, 0.01 ~ 0.1 % Al, 0.02 % or less N, 0.2 % or less P, 0.03 ~ 0.2 % Mn and/or 0.005 ~ 0.2 % Cu, and the balance of Fe and other unavoidable impurities in terms of weight%. When it comprises one of Mn and Cu, the composition of Mn, Cu, and S satisfies one of relationships: 0.58\*Mn/S≤10 and 1≤0.5\*Cu/S≤10. When it comprises both Mn and Cu, the composition satisfies the relationships: Mn+Cu $\leq$ 0.3 and 2 $\leq$ 0.5\*(Mn+Cu)/S $\leq$ 20. MnS, CuS, and (Mn, Cu)S precipitates have an average size of 0.2  $\mu m$ or less. The steel sheets allow the content of solid solution to be controlled by fine MnS, CuS, (Mn, Cu)S precipitates, providing improved bake hardenability, formability, yield strength, and yield strength-ductility balance.



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